Dixie-Narco Boulevard
P.O. Drawer 719
Williston, SC 29853-0719
Tel: 803-266-5000

October 12, 2004

Mr. R. Michael Martin
California Energy Commission
1516 Ninth Street, MS-25
Sacramento, CA 95814-5512

Subject: Title 20, Section 1605.3, Table A-7

Dear Mr. Martin,

Dixie-Narco is pleased to present comments on the proposed amendments to the current Appliance Efficiency Regulations, Title 20, specifically with regards to the requirements for refrigerated beverage vending machines.

To provide the Commission with some background, Dixie-Narco is the largest manufacturer of refrigerated beverage vending machines in the United States. We are a division of the Maytag Corporation, an Energy Star® Partner and have been in business for over 60 years.

The purpose of these comments is to address our concern regarding the proposed method of testing and rating energy consumption for refrigerated vending machines, specifically with regards to machines designed and marketed “For Indoor Use Only”.

In accordance with Industry Standards[1], vending machines are designed for three types of locations, Indoor Use Only, Protected Locations and Suitable for Outdoor Use.

By definition, Indoor Use Only machines are those located inside a building and consequently not subjected to the effects of weathering.[2] These machines are typically constructed with a glass door. They are located in areas such as Schools, Cafeterias, Office Buildings, Airport Terminals, etc. where the average indoor air temperature as published in the 1995 ASHRAE Handbook for HVAC Applications is approximately 75°F. (see table #1).

[1] UL541 Refrigerated Vending Machines, UL751, Vending Machines, UL471, Commercial Refrigerators
[2] UL541, Sixth Edition, Sec. 3.5

Dixie-Narco Boulevard
P.O. Drawer 719
Williston, SC 29853-0719
Tel: 803-266-5000

The design of these machines with respect to lighting and refrigeration does take into account the intended environment for which they will be used. By virtue of their design and Listing by Underwriters Laboratories, these machines are clearly marked "For Indoor Use Only" and may not be used in protected locations or in outdoor locations.

The EPA Energy Star Program[3] recognizes this distinction. It specifies testing of machines that are suitable for outdoor or protected locations to be tested at 90°F and machines and that "Indoor Use Only" machines be tested at 75°F. The three largest manufacturers of refrigerated vending equipment are currently testing and publishing data to this standard.[4]

With reference to Section 1604, Table A-2, Indoor Use Only machines are effectively the same as Commercial Refrigerators with doors. The energy consumption of commercial refrigerators is determined at 75°F in accordance with ASHRAE 117-1992.

The proposed amendments to Title 20, Sec. 1605.3, Table A-7 currently call for measuring energy consumption of all vending machines at 90°F without regards to the design intent. (Indoor vs. Outdoor) Testing an "Indoor Use Only" machine at 90°F will cause it to operate outside of its design parameters with many adverse affects including increased condensate, freeze-up, and increased duty cycle, all which will contribute to erroneous results. Publication of this data will infer a machine is suitable for use in this environment when in fact it may not.

Table A-7 is also placing a limit on energy consumption based upon the tiered limits published in the EPA Energy Star program, effective January 1, 2006. Indoor Use Only machines, when tested at 75°F are energy efficient and are capable of meeting this criteria, however when the same machine is tested at 90°F, it is caused to operate outside of its design intent and exceed these limits. The implications of this would be to potentially exclude a machine that meets Energy Star guidelines from sale in the State of California when in fact it meets applicable Federal guidelines when used in its intended environment.

Another important note is that the referenced test method, ASHRAE 32.1, is currently under review by the ASHRAE Board of Directors with regards to ambient test requirements for "Indoor Use Only" machines.

[3] http://www.energystar.gov/index.cfm?c=vending_machines.pr_vending_machines
[4] http://www.energystar.gov/ia/products/prod_lists/vending_prod_list.pdf

Dixie-Narco Boulevard
P.O. Drawer 719
Williston, SC 29853-0719
Tel: 803-266-5000

In summary, we recommend that Section 1605.3, Table A-7 be amended to include a 75°F ambient temperature for “Indoor Use Only” machines.

Thank you for the opportunity to comment.

Very truly yours,

John E. O’Hare
Manager-Regulatory Engineering
Dixie-Narco, Inc.
johare@dixienarco.com
803-266-5000 x291 Work
803-266-3246 facsimile

Table #1
ASHRAE Handbook, Average Indoor Conditions
Commercial and Public Buildings

General Category	**Specific Category**	**Winter**	**Summer**
Dining & Entertainment Ctrs	Cafeterias & Luncheonettes	70°-74°F	78°F
Office Buildings		70°-74°F	74°-78°F
Libraries	Average	68°-72°F	
Transportation Ctrs	Airport Terminals	70°-74°F	74°-78°F
Schools	Corridors	68°F	80°F